

## From Technology to the Airplane: The Quiet Technology Demonstrators

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## 要旨

Environmentally-friendly technologies are among the key features for the next generation of commercial airplanes. One of the prioritized issues is the noise reduction of community, interior and ramp noise. Examples of airplane noise include jet-mixing noise, shock-cell noise, fan noise, and airframe noise. The Boeing company has conducted a series of noise demonstration tests to evaluate technologies and to meet the noise regulations, which have become more stringent over the years. Collaborating with General Electric, Goodrich, NASA and All Nippon Airways, we examined various noise-reduction concepts for upcoming commercial-airplane products in a flight test in 2005, called "Quiet Technology Demonstrator 2 (QTD2)." This talk describes various noise-reduction technologies, particularly those tested in QTD2 and introduced in new products, such as chevron nozzles and jointless inlet liner, and discusses how the proposed concepts have been implemented to actual airplanes via lab/static/flight tests. This talk also introduces next-generation noise-reduction concepts being investigated in our group at Boeing, modern experimental and computational tools for the noise research as well as on-going efforts of air traffic management.

